



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,269	12/31/2003	Nusrallah Jubran	3216.50US01	8514

24113 7590 10/13/2006

PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.  
4800 IDS CENTER  
80 SOUTH 8TH STREET  
MINNEAPOLIS, MN 55402-2100

EXAMINER

NOTE, JANIS L

ART UNIT PAPER NUMBER

1756

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/749,269

Applicant(s)

JUBRAN ET AL.

Examiner

Janis L. Dote

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18, 29-34, 47-50, 53 and 54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7-14, 16-18, 29-33, 47, 49 and 53 is/are allowed.
- 6) ☒ Claim(s) 6, 15, 34, 48, 50 and 54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/17/04; 5/26/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

Art Unit: 1756

1. The examiner acknowledges the cancellation of claims 19-28, 35-46, 51, 52, and 55-58 set forth in the amendment filed on Sep. 22, 2006. Claims 1-18, 29-34, 47-50, 53, and 54 are pending.

2. The "Amendment to the claims" section filed on Jul. 6, 2006, did not comply with 37 CFR 1.121 for the reasons discussed in the Notice of non-compliant amendment mailed on Sep. 7, 2006. Accordingly, that "Amendment to the claims" section has not been entered.

3. Applicants' election without traverse of Group I, claims 1-18, 29-34, 47-50, 53, and 54, in the reply filed on Jul. 6, 2006, is acknowledged.

4. The examiner has crossed-out the Japanese patent JP 2001-166519 listed on the form PTO-1449 filed on May 17, 2004, because applicants did not provide a copy of said patent. Applicants provided a copy of a machine-assisted translation of the Japanese Patent. The examiner has considered the translation and has properly listed the translation on the form PTO-892 under the heading "Non-patent Documents," which is attached to this office action.

Art Unit: 1756

The examiner also corrected the entry DE 816,923 listed on the form PTO-1449 filed on May 17, 2004, to read -- GB 816,923 --.

The examiner further corrected the number of pages in the listing of the reference to Daskeviciene from "521-526" to read -- 521-525 --. Applicants did not provide page 526 of the reference.

The examiner also corrected the patent document number US-2004/0018903 listed on the form PTO-1449 filed on May 26, 2005, to read -- US-2004/0081903 --, which is entitled "Organophotoreceptor with charge transport compound having an epoxy group" and was published on Apr. 19, 2004. See the European Search report filed by applicants on May 26, 2005, which lists the reference US 2004/0081903, not US 2004/0018903 on the form PTO-1449.

5. The abstract of the disclosure is objected to because it is not limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

Applicants are reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the

Art Unit: 1756

range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The disclosure is objected to because of the following informalities:

(1) The use of trademarks, e.g., Stabar [sic: STABAR] at page 13, line 22, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Art Unit: 1756

(2) The instant specification at page 3, lines 27-28, page 5, lines 8-9, page 10, lines 15-16, and page 24, lines 4-5, discloses that in the charge transport material formula, the groups  $X_1$  and  $X_2$  can be groups having the formula  $-(CH_2)_m-$ , branched or linear, where  $m$  is an integer between 0 and 20, inclusive. It is not clear how the  $-(CH_2)_m-$  group can be branched. Branching in an aliphatic carbon chain requires, for example, at least a  $-(CHR)-$  group, where  $R$  is an alkyl group. The specification does not disclose how the group  $-(CH_2)_m-$  can be branched.

Appropriate correction is required.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

(1) In claims 4, 13, and 32, the recitation " $E_1$  and  $E_2$  are, each independently, an oxiranyl ring" lacks antecedent basis in the specification. See the instant specification, pages 24-25, which discloses three particular charge transport compounds represented by formulas (2) through (4), respectively. In each of the formulas, the groups  $E_1$  and  $E_2$  are described specifically as "unsubstituted" oxiranyl rings. The term "an oxiranyl ring"

Art Unit: 1756

in instant claims 4, 13, and 32 is broader than the disclosed unsubstituted oxiranyl ring because it includes substituted oxiranyl rings.

(2) The formula recited in claims 5, 14, and 33 lacks antecedent basis in the specification. See the instant specification, pages 24-25, which discloses three particular charge transport compounds represented by formulas (2) through (4), respectively. The formula recited in the instant claims is broader than the three disclosed particular compounds because it includes compounds where the groups Y1 and Y2 are not the groups exemplified in formulas (2) through (4), such as the arylamine, diphenylmethanamine.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 6, 15, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1756

Claims 6, 15, and 34 are indefinite in the phrase "X<sub>1</sub> and X<sub>2</sub>, each independently, have the formula -(CH<sub>2</sub>)<sub>m</sub>-, branched or linear, where m is an integer between 0 and 20, inclusive" (emphasis added) because it is not clear how the -(CH<sub>2</sub>)<sub>m</sub>- group can be branched. Branching in an aliphatic carbon chain requires, for example, at least a -(CHR)- group, where R is an alkyl group. The instant specification does not disclose how the group -(CH<sub>2</sub>)<sub>m</sub>- can be branched.

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 48, 50, and 54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.



Art Unit: 1756

Instant claims 48, 50, and 54 recite that the group Z in the charge transport material formula recited in instant claims 1, 10, and 29, from which claims 48, 50, and 54 depend, respectively, is an aromatic group that comprises two phenylene groups bonded together with a linking group that "comprises S, O, N, or SO<sub>2</sub>."

The originally filed specification does not provide an adequate written description of the Z group recited in instant claims 48, 50, and 54. The originally filed specification at page 11, lines 22-27, discloses that the Z linking group can be "an aryl group, which may include any combination of the above aryl groups bonded together either by a bond (as in biphenyl group) or by a linking group (as in stibenyl, diphenylsulfone, an arylamine group). The linking group may include an aliphatic group, an aromatic group, a heterocyclic group, or a combination thereof. Furthermore, either an aliphatic group or an aromatic group within a linking group may comprise at least one heteroatom such as O, S, and N" (emphasis added). In other words, the originally filed specification discloses that the aliphatic group or the aromatic group in the linking group that links the two aryl groups may comprise S, O, or N. The phrase "a linking group that comprises S, O, N . . ." recited in the instant claims is broader than the originally disclosed linking

Art Unit: 1756

group because it includes linking groups that do not comprise an aliphatic group or an aromatic group, such as -NH-.

Furthermore, the phrase "a linking group that comprises . . . SO<sub>2</sub>" is broader than the disclosed -SO<sub>2</sub>- in the originally disclosed diphenylsulfone and in the -1,4-(C<sub>6</sub>H<sub>4</sub>)-SO<sub>2</sub>-1,4-(C<sub>6</sub>H<sub>4</sub>)- groups in the particular charge transport material formulas (2) through (4) at pages 24-26, because it includes linking groups that are not limited to only -SO<sub>2</sub>-, such as aliphatic linking groups that comprise the -SO<sub>2</sub>-, e.g., -1,4-(C<sub>6</sub>H<sub>4</sub>)-CH<sub>2</sub>-SO<sub>2</sub>-CH<sub>2</sub>-1,4-(C<sub>6</sub>H<sub>4</sub>)-.

12. Claims 1-5, 7-14, 16-18, 29-33, 47, 49, and 53 are allowable over the prior art of record.

Claims 6, 15, and 34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach or suggest the charge transport material having the formula recited in the instant claims.

US 6,964,833 B2 (Tokarski'833) and US 6,899,984 B2 (Tokarski'984) both disclose charge transport compounds that are within the compositional limitations of the charge transport material formula recited in the instant claims, except that the

Art Unit: 1756

phenyl groups attached to nitrogen atoms in the hydrazone groups in the respective compounds are not substituted with epoxy groups as required by the charge transport material formula recited in the instant claims. See Tokarski'833, compounds (2) through (5) at cols. 11-12; and Tokarski'984, compounds (2) through (8) at cols. 11-16. Tokarski'833 teaches that its compounds (2) through (5) are representative of the generic chemical formula disclosed at col. 2, lines 1-29. Tokarski'984 teaches that its compounds (2) through (8) are representative of the generic chemical formula disclosed at col. 2, lines 1-22. Both references teach that the Ar group, e.g., the phenyl, in their respective chemical formulas may have a substituent. See Tokarski'833, col. 5, line 65, to col. 6, line 3; and Tokarski'984, col. 5, lines 36-43. Both references teach that the "term group indicates that the generically recited chemical entity (e.g., alkyl group, phenyl group . . . etc.) may have any substituent thereon which is consistent with the bond structure of that group." However, neither Tokarski'833 nor Tokarski'984 teaches or suggests that the Ar groups attached to nitrogen atoms in the hydrazone groups can be substituted with an epoxy group, as recited in the instant claims.

Art Unit: 1756

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLD

Oct. 4, 2006

*Janis L. Dote*  
**JANIS L. DOTE**  
**PRIMARY EXAMINER**  
**GROUP 1500**  
1700